

### Abstract of the Invention

A system and method for optimizing the transmission of a plurality of data packets, each packet having a next-hop address, across a data network are provided. The method includes receiving the data packets at the network traffic device, buffering the data packets, identifying a selected data packet, identifying a second data packet with the same next-hop address as the selected data packet, consolidating the selected data packet with the second data packet to form a consolidated packet, and transmitting the consolidated data packet. The system and method of the present invention are particularly applicable to the optimization of voice data traffic.